J. Smit del. et lith.

Mintern Bros. imp.

HEMIGALE HOSEI.

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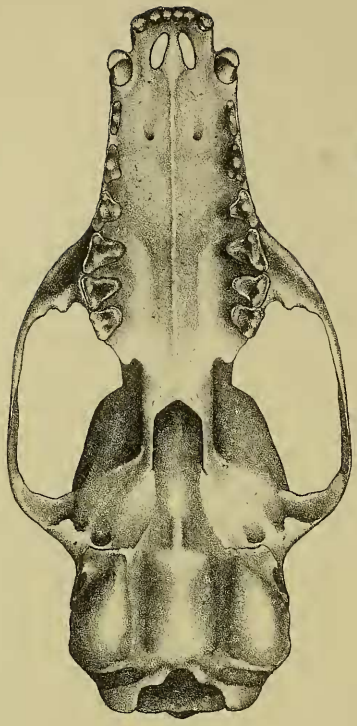

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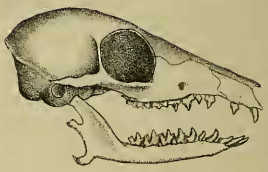

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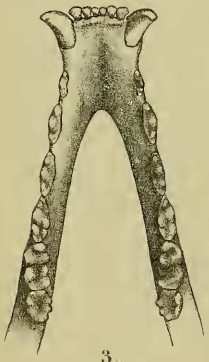

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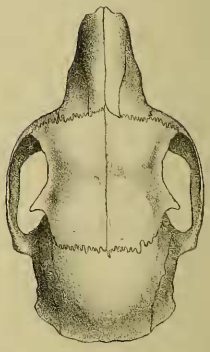

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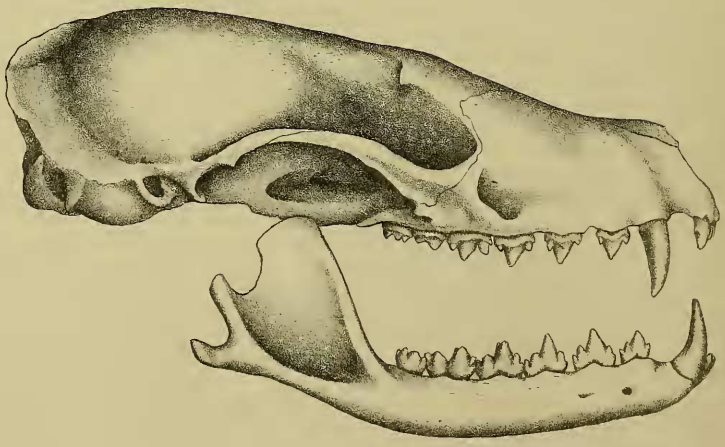

1.

M. H. Fisher del. et lith.

Mintern Bros. imp.

SKULLS OF BORNEAN MAMMALS.

PLATE XVI.

Fig. 10. *Tettix quadriundulatus*, p. 208. ♀ (magnitudine aucta).
11 *a*. *Caletes apterus*, p. 210. ♀.
b. —— ——; a supero visus.
12. *Bliastes superbus*, p. 211. ♀.
13 *a*. —— *striolatus*, p. 212. ♀.
b. —— ——; abdomen ♂ a latere visum.
c. —— ——; abdomen ♂ a supero visum.

PLATE XVII.

Fig. 14 *a*. *Cyrtophyllus crepitans*, p. 213. ♂.
b. —— ——; segmentum anale ♂ a supero visum.
c. —— ——; cercus sinister ♂.
d. —— ——; lamina subgenitalis ♂ ab infero visa.
15. *Gryllodes rufipes*, p. 217. ♀.
16 *a*. *Ectatoderus antillarum*, p. 218. ♂.
b. —— ——. ♀.
17. *Larandus marmoratus*, p. 218. ♂ (magnitudine aucta).
18. *Endacustes dispar*, p. 219. ♀.

2. On some Mammals from Mount Dulit, North Borneo.

By OLDFIELD THOMAS.

[Received February 20, 1892.]

(Plates XVIII. & XIX.).

In 1889 I had the honour of presenting to the Society a paper on the Mammals of Mount Kina Balu, the highest mountain in Northern Borneo, and one previously quite unexplored zoologically. Thanks to the energy of Mr. Charles Hose, a gentleman who has already distinguished himself by his discoveries in the district of Baram, N.E. Sarawak, I am enabled now to give an account of some Mammals collected on Mount Dulit, a mountain about 9000 feet in altitude, standing at the head of the Baram River.

In the autumn of last year Mr. Hose made a successful expedition up Mount Dulit, collecting a large number of specimens at altitudes of from 2000 to 5000 feet, and thereby affording us a very good idea of the fauna of the mountain.

On the whole, judging from the present collection, it may be said that the Mammal-fauna of Dulit is very much the same as that of Kina Balu, there being no instance of a representative but different species [1], while two of the peculiar Kina Balu species reappear here on Dulit. In all probability, therefore, we may look upon Mr. Hose's valuable collection as supplementary to that of Mr. Whitehead, and may expect that in time most of the members of both the collections will be found to occur on both the mountains. This is the more likely as the collections were made at very different seasons of the year, when different forms of animal life would be *en évidence*. Thus Mr. Hose's collection is especially rich in *Tupaiæ*, of which two are new, while Mr. Whitehead's was equally rich in Rats, Mice, and

[1] In the case of the birds, however, *Calyptomena hosei*, Sharpe, represents *C. whiteheadi*, Sharpe, and *Harpactes dulitensis*, Grant, represents *H. oreskios*, the latter occurring in Malacca, Sumatra, and Java as well as on Mt. Kina Balu.

Shrews, and this difference between the two collections, while increasing the number of species, decreases the value of any comparisons of the two mountain-faunas.

The Dulit Mammals amount to 14, of which four are new, the Kina Balu to 21, and, 5 being common to both, the two mountains together contain, so far as is yet known, a total of 30 species. Of these the large proportion of 9 are peculiar to these mountains, but this proportion will probably be reduced as our knowledge of the mammals inhabiting the low countries near the mountains is extended. As a contribution towards this knowledge, a nominal list of the mammals collected by Messrs. Hose and A. H. Everett near the mouth of the Baram River is appended below. By this it will be seen that there is a far greater essential difference between the Dulit and Baram faunas than there is between those of Dulit and Kina Balu.

Mr. Hose is to be congratulated on the interest and value attaching to this mountain-collection, and especially on his discovery of the new *Hemigale*, a species very distinct from its only ally, and belonging to an Order, the Carnivora, in which novelties are now excessively rare.

1. Hemigale hosei, Thos.[1] (Plate XVIII.)

a. ♂. 4000 feet. 30/9/91. *Type*.

Size and proportions very much those of *H. hardwickei*, although the skull seems to be rather more lightly built. General colour above uniform dark smoky brown or black, the bases of the body-hairs whitish. Sides of muzzle at the roots of the whiskers white, the corresponding place in *H. hardwickei* being black; cheek below eye and a patch above and behind it grizzled brownish white. Ears thinly haired, pure white on their inner aspect; edges in marked contrast to the black crown. Chin white; chest, belly, and inner sides of limbs proximally smoky yellowish grey. Rest of limbs and whole of tail black.

Skull (Plate XIX. figs. 1–3) rather slenderer and lighter than that of specimens of *H. hardwickei* of similar age and sex. Muzzle rather more parallel-sided, not tapering so much anteriorly. Infra-orbital foramina comparatively large.

Teeth very much more delicate than those of the allied species. Canines long and slender. $\underline{P^1}$ long antero-posteriorly, double-rooted, with accessory cusps, like $\underline{p^2}$, and like the $\underline{p^2}$ of *H. hardwickei*, in which $\underline{p^1}$ is simple and single-rooted. Other teeth above similar in shape to those of *H. hardwickei*, although markedly smaller, and with their inner lobes especially reduced. $\underline{M^2}$, however, is as large as in *H. hardwickei*, $\underline{m^1}$ and $\underline{m^2}$ being approximately equal. Similarly below the teeth are smaller and narrower, but $\overline{p^1}$ and $\overline{m^2}$ are less so in proportion.

Dimensions (approximate, from skin):—

Head and body 540 millim.; tail 320; hind foot 78.

Skull: basal length 89; greatest breadth 45·3; interorbital

[1] Preliminary diagnoses of the new species have been given, Ann. Mag. N. H. (6) ix. pp. 250–253.

breadth 18·8; tip to tip of postorbital processes 22·5; intertemporal breadth 14·3; palate, length 54, breadth at posterior corner of $\underline{p^4}$ 25; length of palatine foramina 5·2; greatest diameter of infraorbital foramina 5·9.

Teeth: combined breadth of upper incisors 11·2; antero-posterior length of $\underline{p^1}$ 4·6, $\underline{p^2}$ 4·9, $\underline{p^3}$ 5·7, $\underline{p^4}$ 6·1, $\underline{m^1}$ 4·8, $\underline{m^2}$ 4·3; greatest transverse diameter of $\underline{p^4}$ 6·6, of $\underline{m^1}$ 5·5.

This striking species is certainly the chief prize of the collection, as new Carnivores are very rare, and so distinct a new species has not been described for many years.

That *H. hosei* is not simply a melanism of *H. hardwickei* is proved by the white patches on the muzzle, the white ears, whitish underside, and also by the differences in the size of the teeth.

Some animal similar to this, and possibly of the same species, was seen by Mr. Whitehead on Mount Kina Balu, and it is certainly very unlikely that an animal of this sort should be confined to one mountain. We may therefore expect that other specimens of it will turn up as the mountain-systems of N. Borneo are more thoroughly explored.

2. Herpestes semitorquatus, Gray.

a. 2000 feet. 23/9/91.

The Museum possesses a specimen of this rare Mungoose from Baram, besides the type, of which the exact locality in Borneo was not recorded.

3. Rhinolophus luctus, Temm.

a. ♀. 4000 feet. 29/9/91.

As remarked by Dr. Dobson, this Bat is a regular highland species, and seems to occur on all the higher mountains of the Oriental region.

4. Tupaia tana, Raff.

a. 4000 feet. 10/91.

5. Tupaia montana, Thos.[1]

a. ♂. 5000 feet. 14/10/91. *Type*.
b. ♀. 3000 feet. 25/9/91.
c. Immature ♂. 4000 feet. 10/91.

Size much as in Malaccan specimens of *T. ferruginea* (Bornean ones are rather larger), but the tail shorter in proportion. General colour above dusky olive, with a strong rufous suffusion; head clearer olive. Back, in fully adult specimens, with a deep black median line running from the withers to the rump, but broadening out and becoming less sharply defined in its posterior half. Under surface greyish orange, the hairs grey at their bases, broadly washed terminally with rich olive-yellow. Tail concolorous with the body, not greyer, as it is so markedly in *T. ferruginea*; grizzled black and shining ferrugineous above; below the central short-haired part is

[1] *L. c.* p. 252.

grey, then laterally there is a broad band on each side of rich olive-yellow, and the tips are grizzled yellow and black.

Skull and teeth apparently not definitely distinguishable from those of *T. ferruginea*. Zygomatic vacuity large, widely open, about 5 × 2 millim. in the type.

Dimensions:—Head and body (*c.*) 200 millim.; tail (*c.*) 140 (the *extreme* tip of the tail in the type is apparently wanting; the tail-length in *b* and *c* is 127 and 153 respectively); hind foot 41.

Skull: basal length (*c.*) 45·5; greatest breadth 27; anterior rim of orbit to nasal tip 22·5; interorbital breadth 15; palate, length 27·8, breadth outside $\underline{m^2}$ 16·4, inside $\underline{m^2}$ 9·7; diastema between $\underline{i^2}$ and $\underline{c}$ 4·5, between $\underline{c}$ and $\underline{p^2}$ 1·1; front of $\underline{i^1}$ to back of $\underline{m^3}$ 27.

T. montana is most nearly allied to *T. ferruginea*, Raff., and *T. picta*, Thos.[1] It is distinguished from both by the colour of its tail, the former having this member dull annulated grey, and the latter brilliant rufous; it has also a shorter tail than either. From the former again it is separated by developing in old age a median dorsal black line, and from the latter, in which the line is present at all ages, by its less sharp definition, and also the greater uniformity of the general dorsal coloration.

6. Tupaia minor, Günth.

a. ♂. 4500 feet. 9/10/91.
b. ♀. 4000 feet. 10/10/91.

These specimens precisely agree with Dr. Günther's types, and equally differ from the typical *T. javanica* in their smaller size and pure white bellies.

7. Tupaia melanura, Thos.[2]

a. ♀. 5000 feet. 10/91. *Type*.

Size very small, less than in *T. minor*. Fur very soft, close, and velvety. General colour dark olivaceous grey, finely sprinkled with yellow, a slight suffusion of dark rufous on the rump and base of tail. Face rather clearer olive; a short orange-coloured stripe above and below the eye, but not passing backwards towards the ear. No pale shoulder-stripe present. Belly-hairs grey basally, washed terminally, from chin to anus, with bright orange. Outer sides of limbs like back, inner sides like belly; upper surfaces of hands and feet nearly black. Tail furred and coloured like body for about its basal inch and a half above and half inch below, but beyond that it differs from that of all other species by being quite cylindrical and short-haired, the hairs being closely adpressed and not forming a terminal pencil; in colour the short-haired part is deep jet-black throughout.

Skull (Plate XIX. figs. 4 and 5) delicate, smooth, and evenly rounded. Zygomatic foramen reduced to a minute oval opening, which will scarcely admit the point of a needle. Palate without vacuities.

Teeth. $\underline{I^2}$ nearly as long as $\underline{i^1}$; double-rooted. Canine and $\underline{p^2}$ also

[1] Described Ann. Mag. N. H. (6) ix. p. 251.
[2] *L. c.* p. 252.

both double-rooted. Lower teeth as in *T. minor* except that $\bar{c}$ is smaller and $\bar{i}^3$ and $\bar{p}^2$ larger in proportion, so that the tooth-row appears as a whole to be more uniform.

Dimensions (approximate, from skin):—

Head and body 125 millim.; tail 136; hind foot 29·7.

Skull: basal length 30; greatest length 36, greatest breadth 17·7; nasal length 13; interorbital breadth 10; intertemporal breadth 14; palate, length 18·2, breadth outside $\underline{m^2}$ 9·6, inside $\underline{m^2}$ 5·4; diastema between $\underline{i^2}$ and $\underline{c}$ 2·0, between $\underline{c}$ and $\underline{p^2}$ 0·4. Vertical length of $\underline{i^1}$ 2·1, of $\underline{i^2}$ 1·7, of $\underline{c}$ 1·5. Front of $\underline{i^1}$ to back of $\underline{m^3}$ 17·7.

This beautiful little species is the most interesting of the *Tupaiæ* obtained, as it forms a connecting-link with the two species belonging to the genus *Dendrogale*. That genus was founded by Dr. Gray and recognized by Dr. Anderson in his recent review of the *Tupaiidæ* mainly on account of its cylindrical tail, black-and-white banded cheeks, and the absence of the usual shoulder-stripe. Now *T. melanura* on the one hand has a tail even slenderer and more cylindrical than *D. murina* and *D. frenata*, and has no shoulder-stripe, while on the other its face-markings are quite as in *Tupaia*. One character, however, distinguishes *Dendrogale*, or at least *D. frenata*, from all the *Tupaiæ*, namely the extremely small size of the claws, both fore and hind; and so far as this character is concerned *T. melanura* is a true *Tupaia*, as it has claws quite as large in proportion as the other species. For the present therefore I consider it to be a *Tupaia*, and leave the validity of "*Dendrogale*" as an open question to be settled when further, and especially spirit-, specimens are obtained.

8. Sciurus bicolor ephippium, Temm.

a. ♀. 4000 feet. 10/91.

9. Sciurus prevostii, Desm.

a, *b*. ♂ ♀. 5000 feet. 10/91.

Both these specimens are of the grey-backed form of this species, like specimens *a–c* of the Kina Balu collection.

10. Sciurus notatus, Bodd.

a. ♂. 3500 feet. 20/9/91.

This specimen, like the Kina Balu examples of the species, is of the blue-bellied type, and Mr. Hose remarks that he obtained 13 skins, all like this one, during the same month.

11. Sciurus brookei, Thos.[1]

a. ♂. 3800 feet. 25/9/91.

b. ♀. 5000 feet. 10/91. *Type*.

About the size of *Sciurus lokriah*, Hodgs., or rather smaller; decidedly larger than *S. tenuis*, Horsf. General colour above plain olive-grey, grizzled with yellow, but not so finely as in *S. tenuis*. Sides of body and outer and upper surfaces of limbs like the back,

[1] *L. c.* p. 253.

without the rufous suffusion characteristic of *S. tenuis*. Cheeks, anal region, and basal inch of tail below brilliant rufous. Chest and belly greyish white, the hairs grey basally, and dirty white terminally. Tail-hairs broadly annulated with black and pale yellow.

Skull (Plate XIX. fig. 6) with an elongated tapering muzzle, disproportionately large for the size of the animal, although not nearly so long as in *S. rufigenis*, *everetti*, &c. Premolars $\frac{2}{1}$.

Dimensions of the type, an adult female in skin :—

Head and body 205 millim.; tail, without hairs, 144; hind foot 37.

Skull: basal length (*c.*) 37; bregma to nasal tip 32; greatest breadth 25·6; nasals, length 13·2, combined breadth 7; interorbital breadth 15; diastema 10·6; palate, length 22, breadth outside $\underline{m^1}$ 10·2, inside $\underline{m^1}$ 6; front of $\underline{p^4}$ to back of $\underline{m^3}$ 7·4.

This Squirrel belongs to a group of Oriental species characterized by their dull grizzled olive-grey colour, unstriped sides, and annulated black and yellowish tails. For ornamentation some of the species have rufous patches on the head, shoulders, hips, or tail, but some are quite without them, and in all they vary very much in their development. To this group belong *S. chinensis*, Gr., *S. lokriah*, Hodgs., *S. lokrioides*, Hodgs., *S. tenuis*, Horsf., *S. lowii*, Thos., *S. philippinensis*, Waterh., and others. From all of these *S. brookei* is readily distinguished by its bright rufous cheeks and base of tail, and by its size, in which respect it considerably exceeds *S. tenuis* and *S. lowii*, and falls short of all the rest. *S. modestus*, Müll. & Schl., I agree with Dr. Jentink [1] in considering synonymous with *S. tenuis*, as not only is Malacca the first-mentioned locality for it, but the figures both of animal and skull are identical with typical Malaccan and Singapore specimens.

Of other Bornean species *S. jentinki*, Thos., is smaller and much more yellow above, while *S. everetti*, Thos., has a much more elongated muzzle, and neither of them has the rufous markings of *S. brookei*.

I have taken the liberty of naming this species in honour of His Highness the Rajah of Sarawak, in whose service Mr. Hose is, and by whose active encouragement he has been enabled to do so much valuable zoological work in that interesting territory.

This species must be very common on Mt. Dulit, as Mr. Hose states that he obtained 20 specimens of it while he was there.

12. Sciurus melanotis, Müll. & Schl.

a. ♂. 2000 feet. 10/91.

13. Sciurus whiteheadi, Thos.

a. ♂. 4000 feet. 10/91.

This beautiful little species, described and figured in my paper on the Kina Balu mammals, has only been previously recorded from that mountain.

[1] Notes Leyd. Mus. v. p. 125 (1883).

birds in the island of St. Thomas. This new species has a brown style of coloration which is characteristic of many Timeliine birds, but it seems to find its nearest ally in a Malayan genus *Crateroscelis* of Malacca and Borneo. It differs, however, from that genus in certain evident characters, which may be diagnosed as follows:—

AMAUROCICHLA, gen. nov.

Similar to *Crateroscelis*, but distinguished by the shape of the wing, the first primary being nearly as long as the second. Additional characters are:—The bill is as long as the head, and rictal bristles are absent, while the tail-feathers are somewhat acuminate. The type is:—

AMAUROCICHLA BOCAGII, sp. nov. (Plate XX. fig. 1.)

Adult. General colour above uniform chocolate-brown, the wings and tail a little darker than the back; lores and sides of face dark brown like back, the ear-coverts slightly rufescent, like the sides of the neck; cheeks and throat whitish, with a slightly indicated malar line of rufous; lower throat and rest of under surface of the body rufous; the abdomen isabelline; under wing-coverts isabelline; quills sepia-brown below. Total length 5 inches, culmen 0·8, wing 2·55, tail 1·55, tarsus 0·95.

Hab. San Miguel, west coast of St. Thomas, West Africa.

While describing this interesting species I may add the diagnosis of another Timeliine bird recently acquired by the British Museum, which also seems to be undescribed, and for which I propose the following name:—

TURDINUS MOLONEYANUS, sp. nov. (Plate XX. fig. 2.)

Adult. General colour rufous brown, inclining to chestnut on the lower back, rump, and upper tail-coverts, as well as on the wings; primaries dusky, externally light rufous; tail-feathers light rufous brown, externally shaded with chestnut; crown of head slightly more dusky than the back; an indistinct line of ashy grey above the eye, and the feathers below the latter ashy; ear-coverts brown; throat and under surface of body tawny rufous, more rufous on the fore neck, chest, and sides of body, the latter inclining somewhat to reddish brown; thighs like the abdomen; under tail-coverts light chestnut; axillaries and under wing-coverts tawny rufous; quills dusky below, rufescent along the inner web. Total length 6·6 inches, culmen 0·85, wing 2·7, tail 2·5, tarsus 1·0.

Hab. Gold Coast.

The typical specimen was presented to the British Museum by Sir Alfred Moloney, who procured it during the time that he was Governor of the Colony.